4.5 AGRICULTURE AND SOILS

This section describes agricultural production and soil conditions in the proposed Project area and explains land productivity classifications used to determine Project effects. It then presents laws and regulations pertaining to agriculture and soils, and identifies the significance criteria for the impacts analysis. The impacts from Project construction and operations are then analyzed and mitigation measures are presented. Finally, impacts and mitigation measures for Project alternatives are evaluated relative to the proposed Project.

Comments regarding agriculture and soils that arose during public scoping, and during the public comment periods on the October 2004 Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) and the March 2006 Revised Draft EIR focused on damages associated with the permanent acquisition of a pipeline right-of-way (ROW), compensation for the acquisition of ROWs, temporary and permanent loss of agricultural lands, mitigation measures, operational impacts, credible worst case scenario impacts, loss of trees, and effects of air pollution generated by the Project on agriculture. Section 4.6.4 addresses the effects of air pollution generated by the Project on agriculture.

4.5.1 Environmental Setting

4.5.1.1 State Overview

California agriculture generated approximately $31.71 billion in agricultural revenues in 2005 (USDA 2005). More than one-third of California agricultural land is used for crops, while almost two-thirds is used for grazing.

4.5.1.2 Agriculture Along Pipeline Routes

Center Road Pipeline

The proposed Center Road Pipeline route and its alternatives are located in the Oxnard Plain of Ventura County, California. In 2005, the agricultural industry in Ventura County generated approximately $1.12 billion per year (Ventura County Agricultural Commissioner 2006). According to the United States Department of Agriculture 2002 Census, 332,371 acres (134 505.8 hectares [ha]) of land in Ventura County, were in farms (USDA 2006). The top five crops for Ventura County in 2005 were (in descending order) strawberries, nursery stock, lemons, celery, and tomatoes (Ventura County Agricultural Commissioner 2006). Strawberries are the predominant crop along the proposed routes for the Center Road Pipeline and its alternatives. The Center Road Pipeline route would traverse approximately 14 miles (22.5 km) of agricultural fields. Table 4.5-1 provides an overview of the types of agriculture along the Center Road Pipeline routes and its alternatives.

Table 4.5-1 Representative Agriculture along the Proposed Center Road Pipeline Routes

Mileposts	Proposed Center Road Pipeline Route	Center Road Pipeline Alternative 1	Center Road Pipeline Alternative 2	Center Road Pipeline Alternative 3
0-1	Turf grass	Turf grass	Turf grass	Turf grass
1-2	Turf grass, root and vegetable crops	Turf grass	Turf grass, root and vegetable crops	Turf grass, root and vegetable crops
2-3	Berries, strawberries, peppers, sod, fallow, row crops	Orchard, berries	Berries, strawberries, peppers, sod, fallow	Berries, strawberries, peppers, sod, fallow, row crops
3-4	Row crops, cabbage, berries, corn, tree crops	Berries	Row crops, cabbage, berries, corn, tree crops	Row crops, cabbage, berries, corn, tree crops
4-5	Berries, corn, tree crops, fallow	Berries, seed	Berries, corn, tree crops, fallow	Berries, corn, tree crops, fallow
5-6	Row crops, berries, sod	Fallow	Row crops, berries, sod	Row crops, berries, sod
6-7	Sod, row crops, fallow	Fallow, row crops	Fallow, row crops	Sod, row crops, fallow
7-8	Row crops, fallow	Not applicable	Fallow, row crops	Row crops, fallow
8-9	Row crops, fallow, cabbage	Strawberries	Fallow, row crops	Row crops, fallow, cabbage
9-10	Orchard	Strawberries, orchard, row crops	Strawberries, fallow	Orchard
10-11	Fallow, orchard	Orchard, strawberries, row crops	Fallow, orchard	Fallow, orchard
11-12	Fallow	Fallow, strawberries	Orchard	Fallow
12-13	Fallow, row crops, orchard	Fallow, turf grass, row crops	Fallow	Fallow, row crops
13-14	Orchard, row crops,	Orchard, strawberries, row crops	Orchard	Fallow, orchard
14-Center Road Valve Station	Orchard	Orchard	Orchard	Orchard

Sources: Ecology and Environment, Inc. 2004; Entrix 2004, 2005.

Approximately 85 percent of the lands adjoining the proposed route are in agricultural use. The U.S. Department of Agriculture (USDA) rates lands by agricultural potential according to their soil types. The first three categories, in descending order of potential, are Prime Farmland, Farmland of Statewide Importance, and Unique Farmland. These are collectively classified as Important Farmland. The Center Road Pipeline and its alternatives would cross through or run adjacent to lands with soil types classified as areas of Prime Farmland and Farmland of Statewide Importance soils. These

designations, however, do not necessarily mean that the land is being used for agricultural purposes. There is no known Unique Farmland along the pipeline routes.

Line 225 Pipeline Loop

The proposed Line 225 Pipeline Loop and its alternative would be located in the Santa Clarita Valley of Los Angeles County. No cultivated agricultural lands are associated with the Line 225 Pipeline Loop or its alternative. Approximately 111,000 acres (44,920 ha) were in farms in Los Angeles Country (USDA 2006). The Line 225 Pipeline Loop would traverse 3.5 miles (5.6 kilometers [km]) of soils classified as Prime Farmland or Farmland of Statewide Importance, but they currently are not in agricultural use. There is no known Unique Farmland along the pipeline routes.

4.5.1.3 Soil Conditions

The predominant soils beneath the area of the Center Road Pipeline and its alternatives consist of loamy sand and sandy loam. *Loam* refers to soils comprising some mixture of sand, silt, clay, and organic material. The predominant soils beneath the area of the Line 225 Pipeline Loop and its alternative consist of alluvial- and river-transported sediments, sandy loam, loamy sand, loam, and sand. Specific soil types that have been identified along the pipeline routes are listed in Tables 4.5-2 and 4.5-3, and their locations are shown in Figures 4.5-1 and 4.5-2.

The USDA Natural Resources Conservation Service (NRCS) uses two systems to determine a soil's agricultural productivity: the Soil Capability Classification System and the Storie Index Rating System. The Soil Capability Classification System considers soil limitations and soil response to treatment. Capability classes range from Class I soils, which have few limitations for agriculture, to Class VIII soils, which are unsuitable for agriculture. The Storie Index Rating System ranks soil characteristics according to their suitability for agriculture from Grade 1 soils (80 to 100 rating), which have few or no limitations for agricultural production, to Grade 6 soils (a rating of less than 10), which are not suitable for agriculture.

4.5.2 Regulatory Setting

Federal and State regulations applicable to agricultural resources include the Farmland Protection Policy Act, the California Land Conservation (Williamson) Act, and the California Department of Conservation (CDOC) Farmland Mapping and Monitoring Program (FMMP). The CDOC Farmland Mapping and Monitoring Program identifies and designates lands according to categories defined in the Farmland Protection Policy Act (7 U.S.C. 4201, et seq.). Under the Williamson Act, a landowner enters into a contract, agreeing to protect the land's open space or agricultural values in order to receive reduced property taxes. Williamson Act lands are present in Ventura County, but not in Los Angeles County.

Table 4.5-2 Soil Types along the Center Road Pipeline Routes and Acres Disturbed

Miles/ Kilometers	Soil Association	Soil Capability/ Grade[a,b]	Farmland Soil Type[c]	Acres (Hectares) (75-foot [23 meter] Right-of-Way)	Acres (Hectares) (80-foot [24 meter] Right-of-Way)
Proposed Center Road Pipeline[d]					
3.66 (5.89)	Camarillo Loam (Cd)	IIw-2/100	Statewide Importance	33.27 (13.47)	35.49 (14.36)
1.07 (1.72)	Camarillo Loam, Sandy Substratum (Ce)	IIw-2/95	Statewide Importance	9.73 (3.94)	10.38 (4.20)
3.07 (4.94)	Camarillo Sandy Loam (Cc)	IIw-2/100	Statewide Importance	27.91 (11.29)	29.77 (12.05)
0.04 (0.06)	Cropley Clay (0-2% Slopes) (CyA)	IIs-2/95	Prime	0.36 (0.15)	0.39 (0.16)
0.01 (0.02)	Garretson Loam (2-9% Slopes) (GaC)	IIe-1/100	Prime	0.09 (0.04)	0.10 (0.04)
0.1 (0.16)	Gullied Land (GxG)	n/a	Other	0.91 (0.37)	0.97 (0.39)
2.93 (4.72)	Hueneme Loamy Sand, Loamy Substratum (Hm)	IIw-2/90	Prime	26.64 (10.78)	28.41 (11.50)
0.66 (1.06)	Hueneme Sandy Loam (Hn)	IIw-2/95	Prime	6.00 (2.43)	6.40 (2.59)
1.36 (2.19)	Pacheco Silty Clay Loam (Pa)	IIw-2/95	Statewide Importance	12.36 (5.00)	13.19 (5.34)
0.51 (0.82)	Rincon Silty Clay Loam (2-9% Slopes) (RcC)	IIe-3/95	Prime	4.64 (1.88)	4.95 (2.00)
0.11 (0.18)	Sorrento Loam (2-9% Slopes) (SwC)	IIe-1/90	Statewide Importance	1.00 (0.40)	1.07 (0.43)
0.05 (0.08)	Zamora Loam (2-9% Slopes) (ZmC)	IIe-1/95	Statewide importance	0.45 (0.18)	0.48 (0.20)
0.79 (1.27)	Huerhero very fine sandy loam 0 to 5% slopes (HuB)	IIIe-3	Other	7.18 (2.91)	7.66 (3.10)
0.23 (0.37)	Huerhero very fine sandy loam, 9 to 15% slopes (HuD2)	IVe-3	Other	2.09 (0.85)	2.23 (0.90)
Total Proposed Center Road Pipeline			**Statewide Importance**	**84.27 (34.11)**	**89.89 (36.38)**
Total Proposed Center Road Pipeline			**Prime**	**37.73 (15.27)**	**40.24 (16.29)**
Center Road Pipeline Alternative 1					
1.53 (2.5)	Anacapa Sandy Loam (0-2 Percent Slopes) (AcA)	IIs-4/1	Prime	13.91 (5.63)	14.84 (6.00)
0.62 (1)	Anacapa Sandy Loam (2-9 Percent Slopes) (AcC)	IIe-1/1	Prime	5.64 (2.28)	6.01 (2.43)
1.69 (2.7)	Camarillo Loam (Cd)	IIw-2/2	Statewide Importance	15.36 (6.22)	16.39 (6.63)

Table 4.5-2 Soil Types along the Center Road Pipeline Routes and Acres Disturbed

Miles/ Kilometers	Soil Association	Soil Capability/ Grade[a,b]	Farmland Soil Type[c]	Acres (Hectares) (75-foot [23 meter] Right-of-Way)	Acres (Hectares) (80-foot [24 meter] Right-of-Way)
0.4 (0.64)	Camarillo Loam, Sandy Substratum (Ce)	IIw-2/2	Statewide Importance	3.64 (1.47)	3.88 (1.57)
1.27 (2)	Camarillo Sandy Loam (Cc)	IIw-2/2	Statewide Importance	11.55 (4.67)	12.32 (4.98)
0.2 (0.32)	Cropley Clay (0-2 Percent Slopes) (CyA)	IIs-5/3	Prime	1.82 (0.74)	1.94 (0.78)
0.2 (0.32)	Garretson Loam (2-9 Percent Slopes) (GaC)	IIe-1/1	Prime	1.82 (0.74)	1.94 (0.78)
0.58 (0.93)	Gullied Land (GxG)	NA	Other	5.27 (2.13)	5.62 (2.28)
0.15 (0.24)	Hueneme Loamy Sand, Loamy Substrate (Hm)	IIw-1/3	Prime	1.36 (0.55)	1.45 (0.59)
3.78 (6.1)	Hueneme Sandy Loam (Hn)	IIw-2/2	Prime	34.36 (13.91)	36.65 (14.83)
0.95 (1.53)	Metz Loamy Sand (0-2 Percent Slopes) (Mea)	IIIs-4/2	Prime	8.64 (3.50)	9.21 (3.73)
0.8 (1.29)	Pacheco Silty Clay Loam (Pa)	IIw-2/2	Statewide Importance	7.27 (2.94)	7.76 (3.14)
1.88 (3)	Pico Sandy Loam (0-2 Percent Slopes) (PcA)	IIs-4/1	Prime	17.09 (6.92)	18.23 (7.38)
0.39 (0.63)	Pico Sandy Loam (2-9 Percent Slopes) (PcC)	IIe-1/2	Prime	3.55 (1.43)	3.78 (1.53)
0.23 (0.37)	Rincon Silty Clay Loam (2-9 Percent Slopes) (RcC)	IIe-3/3	Prime	2.09 (0.85)	2.23 (0.90)
0.13 (0.21)	Sorrento Loam (2-9 Percent Slopes) (SwC)	IIe-1/1	Statewide Importance	1.18 (0.48)	1.26 (0.51)
0.2 (0.32)	Zamora Loam (2-9 Percent Slopes) (ZmC)	IIe-1/1	Statewide Importance	1.82 (0.74)	1.94 (0.78)
Total Center Road Pipeline Alternative 1			**Statewide Importance**	**40.82 (16.52)**	**43.54 (17.62)**
Total Center Road Pipeline Alternative 1			**Prime**	**90.27 (36.53)**	**96.29 (38.97)**
Center Road Pipeline 2					
0.12 (0.19)	Anacapa Sandy Loam (2-9 Percent Slopes) (AcC)	IIe-1/1	Prime	1.09 (0.44)	1.16 (0.47)
3.84 (6.2)	Camarillo Loam (Cd)	IIw-2/2	Statewide Importance	34.91 (14.13)	37.24 (15.07)
1.46 (2.3)	Camarillo Loam, Sandy Substratum (Ce)	IIw-2/2	Statewide Importance	13.27 (5.37)	14.16 (5.73)
0.97 (1.56)	Camarillo Sandy Loam (Cc)	IIw-2/2	Statewide Importance	8.82 (3.57)	9.41 (3.81)

Table 4.5-2 Soil Types along the Center Road Pipeline Routes and Acres Disturbed

Miles/ Kilometers	Soil Association	Soil Capability/ Grade[a,b]	Farmland Soil Type[c]	Acres (Hectares) (75-foot [23 meter] Right-of-Way)	Acres (Hectares) (80-foot [24 meter] Right-of-Way)
0.2 (0.32)	Cropley Clay (0-2 Percent Slopes) (CyA)	IIs-2/3	Prime	1.82 (0.74)	1.94 (0.78)
0.2 (0.32)	Garretson Loam (2-9 Percent Slopes) (GaC)	IIe-1/1	Prime	1.82 (0.74)	1.94 (0.78)
0.61 (0.98)	Gullied Land (GxG)	NA	Other	5.55 (2.24)	5.92 (2.39)
0.57 (0.92)	Hueneme Loamy Sand, Loamy Substrate (Hm)	IIw-2/3	Prime	5.18 (2.10)	5.53 (2.24)
2.83 (4.6)	Hueneme Sandy Loam (Hn)	IIw-2/2	Prime	25.73 (10.41)	27.44 (11.11)
2.16 (3.5)	Pacheco Silty Clay Loam (Pa)	IIw-2/2	Statewide Importance	19.64 (7.95)	20.95 (8.48)
0.23 (0.37)	Rincon Silty Clay Loam (2-9 Percent Slopes) (RcC)	IIe-3/3	Prime	2.09 (0.85)	2.23 (0.90)
0.11 (0.18)	Sorrento Loam (2-9 Percent Slopes) (SwC)	IIe-1/1	Statewide Importance	1.00 (0.40)	1.07 (0.43)
0.2 (0.32)	Zamora Loam (2-9 Percent Slopes) (ZmC)	IIe-1/1	Statewide Importance	1.82 (0.74)	1.94 (0.78)
Total Center Road Pipeline Alternative 2			**Statewide Importance**	**79.45 (32.16)**	**84.75 (34.30)**
Total Center Road Pipeline Alternative 2			**Prime**	**37.73 (15.27)**	**40.24 (16.29)**
Center Road Pipeline Alternative 3					
0.1 (0.16)	Anacapa Sandy Loam (2-9 Percent Slopes) (AcC)	IIe-1/1	Prime	0.91 (0.37)	0.97 (0.39)
3.8 (6.1)	Camarillo Loam (Cd)	IIw-2/2	Statewide Importance	34.55 (13.98)	36.85 (14.91)
1.1 (1.8)	Camarillo Loam, Sandy Substratum (Ce)	IIw-2/2	Statewide Importance	10.00 (4.05)	10.67 (4.32)
1.4 (2.3)	Camarillo Sandy Loam (Cc)	IIw-2/2	Statewide Importance	12.73 (5.15)	13.58 (5.49)
0.2 (0.32)	Cropley Clay (0-2 Percent Slopes) (CyA)	IIs-2/3	Prime	1.82 (0.74)	1.94 (0.78)
0.2 (0.32)	Garretson Loam (2-9 Percent Slopes) (GaC)	IIe-1/1	Prime	1.82 (0.74)	1.94 (0.78)
0.6 (0.97)	Gullied Land (GxG)	NA	Other	5.45 (2.21)	5.82 (2.35)
0.7 (1.13)	Hueneme Loamy Sand, Loamy Substratum (Hm)	IIw-2/3	Prime	6.36 (2.58)	6.79 (2.75)
2.7 (4.3)	Hueneme Sandy Loam (Hn)	IIw-2/2	Prime	24.55 (9.93)	26.18 (10.60)
1.4 (2.3)	Pacheco Silty Clay Loam (Pa)	IIw-2/2	Statewide Importance	12.73 (5.15)	13.58 (5.49)

Table 4.5-2 Soil Types along the Center Road Pipeline Routes and Acres Disturbed

Miles/ Kilometers	Soil Association	Soil Capability/ Grade[a,b]	Farmland Soil Type[c]	Acres (Hectares) (75-foot [23 meter] Right-of-Way)	Acres (Hectares) (80-foot [24 meter] Right-of-Way)
0.2 (0.32)	Rincon Silty Clay Loam (2-9 Percent Slopes) (RcC)	IIe-3/3	Prime	1.82 (0.74)	1.94 (0.78)
0.1 (0.16)	Sorrento Loam (2-9 Percent Slopes) (SwC)	IIe-1/1	Statewide Importance	0.91 (0.37)	0.97 (0.39)
0.2 (0.32)	Zamora Loam (2-9 Percent Slopes) (ZmC)	IIe-1/1	Statewide Importance	1.82 (0.74)	1.94 (0.78)
Total Center Road Pipeline Alternative 3			**Statewide Importance**	**72.73 (29.43)**	**77.58 (31.39)**
Total Center Road Pipeline Alternative 3			**Prime**	**37.27 15.08**	**39.76 (16.09)**

Source: U.S. Department of Agriculture 1970a.

Notes:

[a] Soil capability designations:

- II Soils with moderate limitations that reduce the choice of plants or that require moderate conservation practices.
- e Limitation due to erosion unless close-growing plant cover is maintained.
- w Water in or on the soil interferes with plant growth or cultivation (corrected by artificial drainage).
- s Soil is limited mainly because it is shallow, droughty, or stony.

[b] Storie Index Rating System grades range from 1 to 6, with grade 1 soils having few or no limitations that restrict use for crops and grade 6 having soils that are not suited for farming:

1. Potential or actual erosion hazard.
2. Poor drainage or overflow hazard.
3. Slow or very slow permeability in subsoil or substratum.
4. Coarse or gravelly texture.
5. Fine or very fine texture.

[c] California Department of Conservation 1998.

[d] here would be a 75- to 80-foot construction ROW from milepost (MP) 0 to MP 12.1 of this route. The ROW would vary between 75 and 100 feet along portions of the pipeline from MP 12.1 to 14.7 due to the topography of the area.

Table 4.5-3 Soil Types along the Line 225 Pipeline Loop Routes and Acres Disturbed

Miles / Kilometers		Soil Association	Soil Capability/ Grade[a,b]	Farmland Type[c]	Acres (Hectares) (75-foot [23 meter] Right-of-Way)		Acres (Hectares) (80-foot [24 meter] Right-of-Way)	
Line 225 Pipeline Loop								
0.13	(0.21)	Castaic-Balcolm Silty Clay Loams (30-50 Percent Slopes, Eroded) (CmF2)	VIe-1/1	Other	1.18	(0.48)	1.26	(0.51)
1.61	(2.6)	Hanford Sandy Loam (0-2 Percent Slopes) (HcA)	IVec-1/1	Prime	14.64	(5.92)	15.61	(6.32)
0.32	(0.51)	Hanford Sandy Loam (2-9 Percent Slopes) (HcC)	IVec-1/2	Prime	2.91	(1.18)	3.10	(1.26)
0.08	(0.13)	Metz Loamy Sand (0-2 Percent Slopes) (MfA)	IIs-4[d]/1	Prime	0.73	(0.29)	0.78	(0.31)
0.05	(0.08)	Metz Loamy Sand (2-5 Percent Slopes) (MfC)	IIs-4[d]/1	Other	0.45	(0.18)	0.48	(0.20)
0.63	(1.01)	Mocho Sandy Loam (0-2 Percent Slopes) (MoA)	I-1[d]/1	Prime	5.73	(2.32)	6.11	(2.47)
0.37	(0.6)	Ojai Loam (15-30 Percent Slopes) (OgE)	VIe-1/3	Other	3.36	(1.36)	3.59	(1.45)
0.66	(1.06)	Ojai Loam (2-9 Percent Slopes) (OgC)	IIIe-1[d]/3	Prime	6.00	(2.43)	6.40	(2.59)
0.86	(1.38)	Ojai Loam (30-50 Percent Slopes) (OgF)	VIIIe-1/5	Other	7.82	(3.16)	8.34	(3.37)
0.07	(0.11)	Riverwash (Rg)	VIIIw-4/6	Other	0.64	(0.26)	0.68	(0.27)
0.92	(1.48)	Sandy Alluvial Land (Sa)	VIIw-4/6	Other	8.36	(3.38)	8.92	(3.61)
0.79	(1.27)	Sorrento Loam (0-2 Percent Slopes) (SsA)	I-1[d]/1	Prime	7.18	(2.91)	7.66	(3.10)
0.87	(1.4)	Yolo Loam (0-2 Percent Slopes) (YoA)	I-1[d]/1	Prime	7.91	(3.20)	8.44	(3.41)
			Total	**Prime**	**45.09**	**(18.25)**	**48.10**	**(19.46)**
Line 225 Pipeline Loop Alternative								
0.91	(1.46)	Sorrento Loam (0-2 Percent Slopes) (SsA)	I-1[d]/1	Prime	8.27	(3.35)	8.82	(3.57)
0.02	(0.03)	Mocho Loam (0-2 Percent Slopes) (MpA)	I-1[d]/1	Prime	0.18	(0.07)	0.19	(0.08)
0.06	(0.1)	Mocho Sandy Loam (0-2 Percent Slopes) (MoA)	I-1[d]/1	Prime	0.55	(0.22)	0.58	(0.24)
0.06	(0.1)	Riverwash (Rg)	VIIIe-16	Other	0.55	(0.22)	0.58	(0.24)
0.11	(0.18)	Sandy Alluvial Land (Sa)	VIIw-4/6	Other	1.00	(0.40)	1.07	(0.43)

Table 4.5-3 Soil Types along the Line 225 Pipeline Loop Routes and Acres Disturbed

Miles / Kilometers		Soil Association	Soil Capability/ Grade[a,b]	Farmland Type[c]	Acres (Hectares) (75-foot [23 meter] Right-of-Way)		Acres (Hectares) (80-foot [24 meter] Right-of-Way)	
0.12	(0.19)	Terrace Escarpments (TsF)	VIIe-1/6	Other	1.09	(0.44)	1.16	(0.47)
0.21	(0.34)	Zamora Loam (2-9 Percent Slopes) (ZaC)	IIe-1[d]/1	Prime	1.91	(0.77)	2.04	(0.82)
			Total	**Prime**	**10.91**	**(4.41)**	**11.64**	**(4.71)**

Source: U.S. Department of Agriculture 1970b.

Notes:

[a] Soil Capability Class Designations:

- II Soils with moderate limitations that reduce the choice of plants or that require moderate conservation practices.
- III Soils with severe limitations that reduce the choice of plants, require special conservation practices, or both.
- VIII Soils and landforms with limitations that preclude their use for commercial plant production and restrict their use to recreation, wildlife habitat, or water supply.
- c Limitation is climate that is too cold or too dry.
- e Limitation due to erosion unless close-growing plant cover is maintained.
- w Water in or on the soil interferes with plant growth or cultivation (corrected by artificial drainage).
- NA Not applicable.

[b] Soil Grades - Grades range from 1 to 6, with Grade 1 soils having few or no limitations that restrict use for crops and Grade 6 soils that are not suited for farming.

- 1 Potential or actual erosion hazard.
- 2 Poor drainage or overflow hazard.
- 3 Slow or very slow permeability in subsoil or substratum.
- 4 Coarse or gravelly texture.
- 5 Fine or very fine texture.

[c] California Department of Conservation 1995.

[d] Capability classes are provided only for irrigated soils for these soils classifications. These soils are presumed to be not irrigated.

The major Federal, State, and local laws and regulations pertaining to agriculture and soils are summarized in Table 4.5-4.

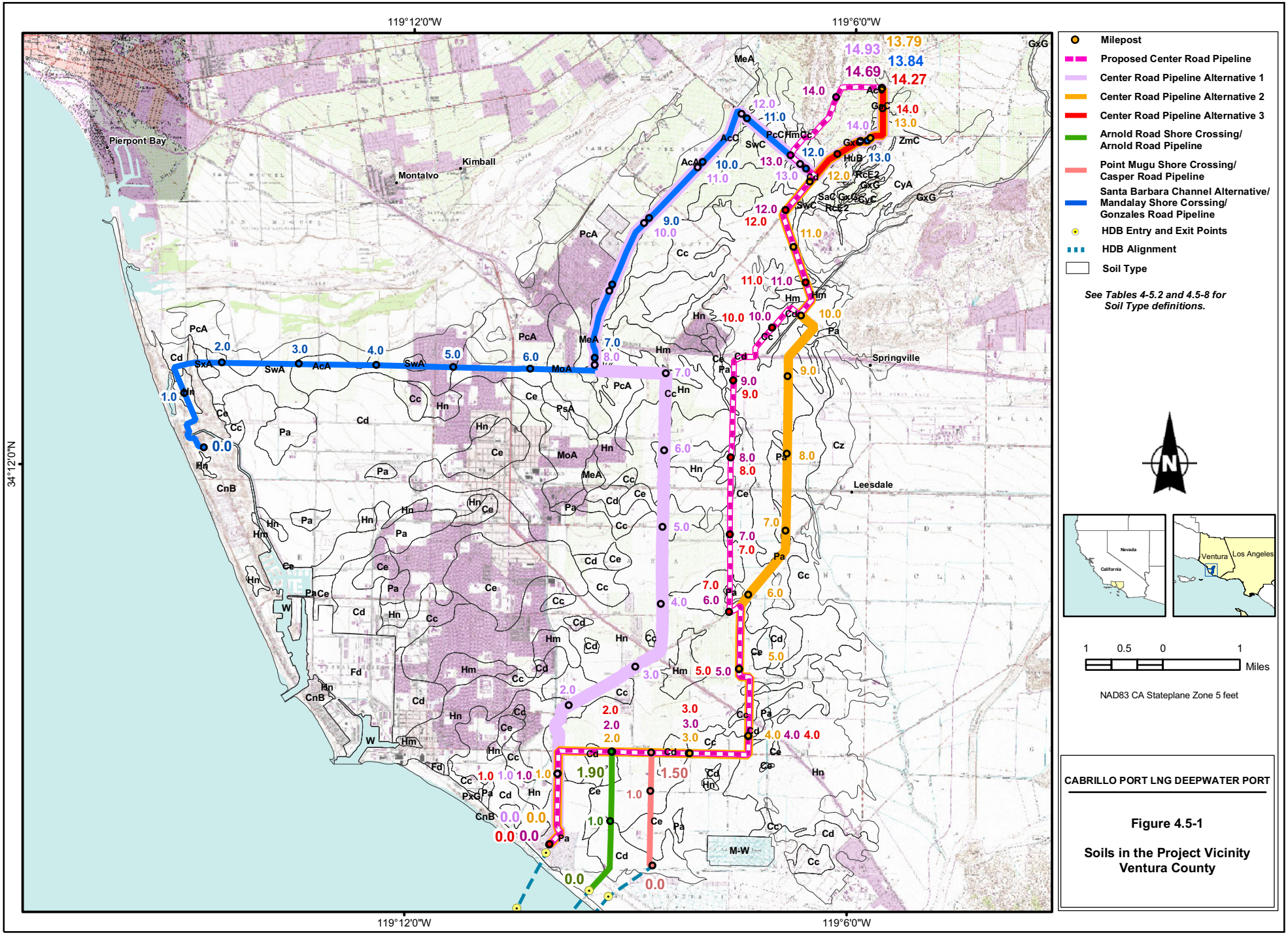
4.5.3 Significance Criteria

Impacts on agricultural resources are considered significant if the Project construction or operation would result in any of the following adverse effects:

- Convert Prime Farmland or Farmland of Statewide Importance designated under the Farmland Protection Policy Act (FPPA) and the Farmland Mapping and Monitoring Program of the California Resources Agency to non-agricultural uses;
- Conflict with existing zoning for agricultural use or a Williamson Act contract;
- Cause the permanent loss of agricultural soils that exceed Ventura County criteria (Prime/Statewide 5 to 20 or more acres (2.02 to 8.1 ha) depending on General Plan land use designation);
- Cause the cumulative loss of agricultural soils if there is a loss of 1 acre (0.4 ha) of Prime/Statewide or 2 acres (0.8.1 ha) of Unique Farmland in Ventura County;
- Cause substantial soil erosion or the loss of topsoil;
- Impair the productivity of adjacent agricultural areas;
- Substantially increase pests and/or diseases in nearby agricultural areas; or
- Change the existing environment, which, because of location or nature, could result in conversion of farmland to non-agricultural use.

The following significance criteria would not be applicable to the proposed Project and are not discussed further in the analysis:

- The Project would not pose substantial land use incompatibilities with adjacent property currently in or suitable for agricultural production. The installation of a pipeline would not prevent agricultural production; however, it would prohibit large, deep-rooted trees within 15 feet (4.6 meters [m]) of the pipeline (a 33-foot (10.1 m) swath centered on the pipeline). Therefore, the presence of a natural gas transmission would not, in and of itself, change the existing environment or land use compatibility such that farmland would have to be converted to non-agricultural uses; and
- The Project would not adversely affect the quantity or quality of water used for agricultural production, or otherwise reduce water available for agricultural uses.


119°12'0"W
119°6'0"W
34°12'0"N
Milepost
Proposed Center Road Pipeline
Center Road Pipeline Alternative 1
Center Road Pipeline Alternative 2
Center Road Pipeline Alternative 3
Arnold Road Shore Crossing/ Arnold Road Pipeline
Point Mugu Shore Crossing/ Casper Road Pipeline
Santa Barbara Channel Alternative/ Mandalay Shore Corssing/ Gonzales Road Pipeline
HDB Entry and Exit Points
HDB Alignment
Soil Type
See Tables 4-5.2 and 4.5-8 for Soil Type definitions.
Pierpont Bay
Montalvo
Kimball
Springville
Leesdale
Nevada
California
Ventura
Los Angeles
1 0.5 0 1
Miles
NAD83 CA Stateplane Zone 5 feet
CABRILLO PORT LNG DEEPWATER PORT
Figure 4.5-1
Soils in the Project Vicinity
Ventura County
\\BUFNT4\gis\SanFrancisco\CabrilloPort\Maps\MXD\Sec4-5-SoilsAg\Sec4-5-1_SoilsVenturaCo.mxd GIS/GRC 8-25-06
Source: Entrix 2005; BHP, December 2005

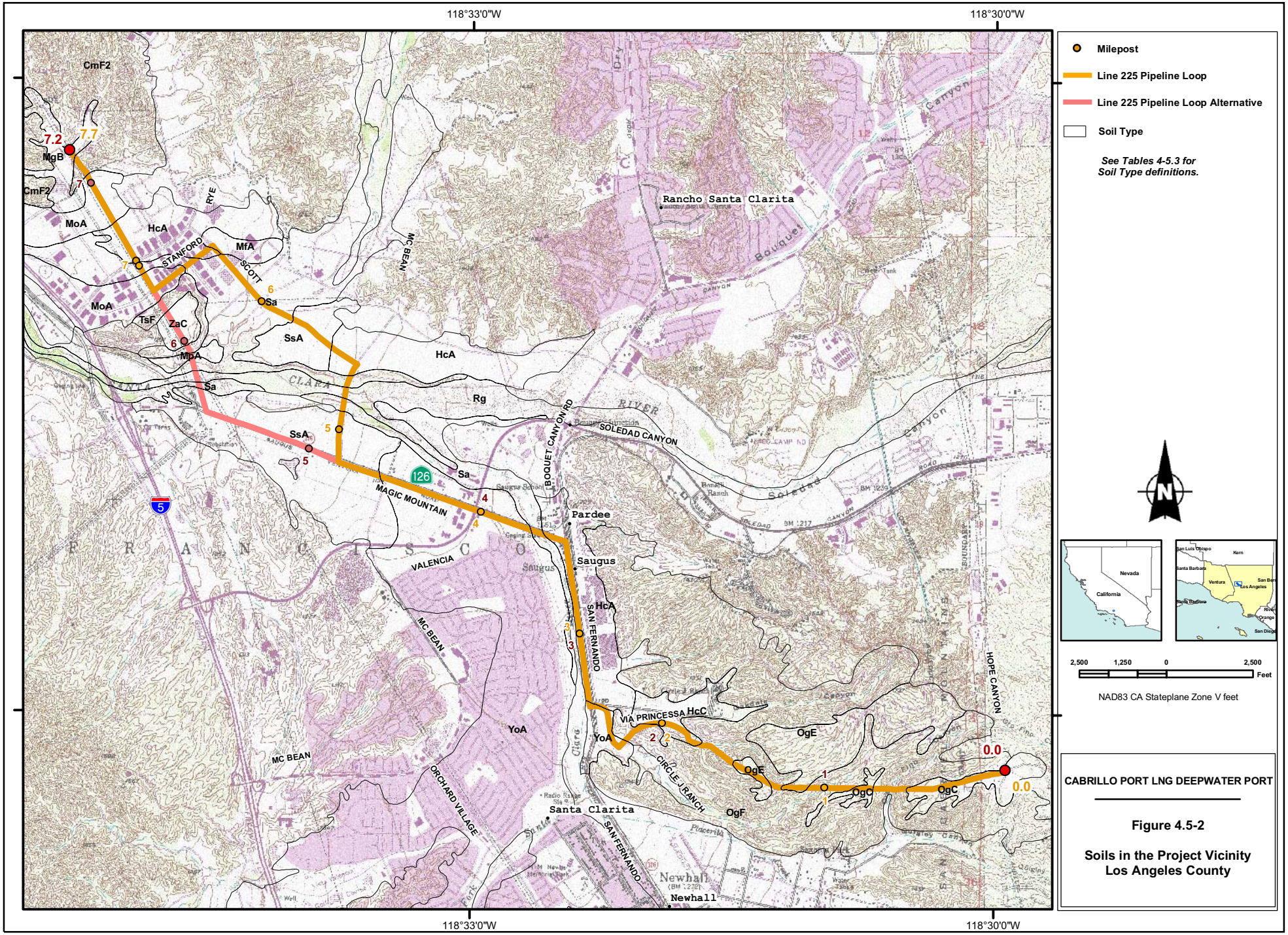

118°33'0"W
118°30'0"W
Milepost
Line 225 Pipeline Loop
Line 225 Pipeline Loop Alternative
Soil Type
See Tables 4-5.3 for Soil Type definitions.
Rancho Santa Clarita
Pardee
Saugus
Newhall
Santa Clarita
Nevada
California
2,500 1,250 0 2,500
Feet
NAD83 CA Stateplane Zone V feet
CABRILLO PORT LNG DEEPWATER PORT
Figure 4.5-2
Soils in the Project Vicinity
Los Angeles County
Source: Entrix 2004
\\BUFNT4\GIS\SanFrancisco\Cabrilloport\maps\mxd\Sec4-5-2_SoilsLACo.mxd GIS-GRC 1-5-06

Table 4.5-4 Major Laws, Regulatory Requirements, and Plans for Agriculture and Soils

Law/Regulation/Plan/ Agency	Key Elements and Thresholds; Applicable Permits
Federal	
Farmland Protection Policy Act (7 United States Code [U.S.C.] § 4201 et seq.) - *Natural Resources Conservation Service of the Department of the Interior*	• The FPPA is intended to minimize the impact that Federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. The Act requires that before taking or approving any action that would result in conversion of farmland as defined in the Act, the agency shall examine the effects of the action, and if there are adverse effects, consider alternatives to lessen them. It ensures that—to the extent possible—Federal programs are administered to be compatible with state and local units of government and private programs and policies, to protect farmland. The FPPA does not authorize the Federal government to regulate the use of private or non-Federal land or in any way to affect the property rights of owners. • For the purpose of the FPPA, "Farmland" includes Prime Farmland, Unique Farmland, and Farmland of Statewide or Local Importance. Farmland subject to FPPA requirements does not have to be currently used for cropland. It can be forestland, pastureland, cropland, or other land, but not water or urban built-up land. **Prime Farmland.** Land with the best combination of physical and chemical features able to sustain the long-term production of agricultural crops. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. The land must have been used for the production of irrigated crops at some time during the two update cycles (a cycle is equivalent to two years) before the mapping date of 2002 (or since 1998). **Farmland of Statewide Importance.** Land similar to Prime Farmland but with minor shortcomings, such as greater slopes or with less ability to hold and store moisture. The land must have been used for the production of irrigated crops at some time during the two update cycles before the mapping date (or since 1998). **Unique Farmland.** Land of lesser quality soils used for the production of the State's leading agricultural crops. This land is usually irrigated but may include non-irrigated orchards or vineyards, as found in some climate zones in California. The land must have been cultivated at some time during the two update cycles before the mapping date (or since 1998). **Farmland of Local Importance.** Farmland of local importance is land of importance to the local agricultural economy, as determined by each county's board of supervisors and a local advisory committee. Farmland of local importance in Los Angeles County includes lands that do not qualify for Prime, Statewide, or Unique designations but are currently irrigated crops or pasture or non-irrigated crops; lands that would meet the Prime or Statewide designation and that have been improved for irrigation but are now idle; and lands that currently support confined livestock, poultry operations, and aquaculture. • Requires the completion of Form NRCS-APC-106.

Table 4.5-4 Major Laws, Regulatory Requirements, and Plans for Agriculture and Soils

Law/Regulation/Plan/ Agency	Key Elements and Thresholds; Applicable Permits
State	
California Department of Conservation Farmland Mapping and Monitoring Program (FMMP) *- CDOC*	• Using Soil Conservation Service soil classifications and other information, CDOC develops "Important Farmland Maps." The purpose of the CDOC's FMMP is to provide land use conversion information for decision makers to use in their planning for the present and future of California's agricultural land resources. Land not recently farmed does not show up on Important Farmland maps. Before removing unfarmed land from the maps, CDOC waits two mapping cycles (four years). The Important Farmland Maps and the advisory guidelines for the FMMP identify five agriculture-related categories: Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, and Grazing Land.
California Land Conservation Act of 1965 (Williamson Act) *- California Department of Conservation Division of Land Resource Protection*	• The Williamson Act creates an arrangement whereby private landowners contract with counties and cities to voluntarily restrict their land to agricultural and compatible open-space uses. The vehicle for these agreements is a rolling term 10-year contract called a Land Conservation Contract. The contract term is automatically renewed for one additional year each year thereafter unless the landowner or the County files a notice of nonrenewal. In return for the voluntary restriction, contracted parcels are assessed for property tax purposes at a rate consistent with their actual (agricultural) use, rather than potential market value.
California Coastal Commission (CCC), California Coastal Act (CCA) including § 30241 through § 30243 *- Ventura County/City of Oxnard*	• Establishes a coastal management program containing a comprehensive set of policies and requiring the establishment of a local coastal program within each coastal jurisdiction. • Provides a framework for the protection of coastal lands and the orderly management of coastal development. • Implemented at the local level through local coastal programs. • Ensures that ultimate control of the use of coastal areas is retained by the state. • For agricultural lands within the coastal zone, Coastal Act § 30241 requires prime agricultural land to be maintained in agricultural production; § 30242 prevents the conversion of agricultural uses to non-agricultural uses and § 30243 protects long-term productivity of soils.
Local	
Ventura County and City of Oxnard Save Our Agricultural Resources (SOAR) Ordinances *- Ventura County/City of Oxnard*	• SOAR ordinances are based on the General Plan of the jurisdiction to which they apply and are local land use regulations that have binding legal authority. SOAR places restrictions on the expansion of a City Urban Restriction Boundary (CURB) or restricts the conversion of farmland and open-space lands to urban uses. However, SOAR does not provide permanent protection for open space or farmland, does not acquire parkland or provide recreation facilities, and does not limit the types of uses permitted in agricultural, open-space, or rural zones. The SOAR ordinances, in most cases, will "sunset" by 2020 or 2030.
City of Oxnard/ Ventura County Local Area Formation Commission (LAFCO) *- City of Oxnard/Ventura*	• The Ventura LAFCO considers General Plan consistency, including SOAR ordinances and CURB lines, when making decisions regarding city annexations and sphere of influence amendments. Even though the LAFCO is not bound by SOAR ordinances or CURB lines, because they are local land use regulations tied to local agricultural and open-space General Plan designations and/or the ability to extend services, the policy of the Ventura

Table 4.5-4 Major Laws, Regulatory Requirements, and Plans for Agriculture and Soils

Law/Regulation/Plan/ Agency	Key Elements and Thresholds; Applicable Permits
County	LAFCO is to not allow city annexations or sphere of influence amendments into areas covered by a SOAR ordinance or outside the CURB line of a city. Thus, if a SOAR ordinance requires voter approval to convert land designated as agricultural or open space on a General Plan to another land use, or voter approval to extend city services, the Ventura LAFCO requires that the voters approve such a change before LAFCO action on any proposal to amend a city's sphere of influence or that involves annexation to a city.

4.5.4 Impact Analysis and Mitigation

This section addresses impacts associated with the loss of agricultural land and the loss of productivity of agricultural lands due to Project activities. Other potential impacts that could affect agriculture, such as erosion, soil contamination, and introduction of noxious weeds, are addressed in Sections 4.18, "Water Quality and Sediments"; 4.12, "Hazard Materials"; and 4.8, "Terrestrial Biology," respectively. Land use incompatibilities are discussed in Section 4.13, "Land Use." This section describes the impacts on agriculture and soil associated with construction and operation of the proposed Project. Applicant-proposed measures (AM) and agency-recommended mitigation measures (MM) are defined in Section 4.1.5, "Applicant Measures and Mitigation Measures.

The following describes construction methods that would be used for the installation and any maintenance work needed for the onshore pipeline. These are presented here because they apply to most of the impact discussions.

Contractors to the Applicant or its designated representative, Southern California Gas Company (SoCalGas), would install the pipeline. SoCalGas contractors would use the following procedures when installing a pipeline in agricultural lands. A temporary construction easement (TCE) would be acquired to secure adequate workspace. For this Project, construction would occur in a 75 to 80-foot (22.9 to 24.4 m) TCE. Construction within or along a paved roadway would require the use of the unpaved road shoulder. Depending on the available workspace, a TCE may be required within agricultural lands adjacent to the roadway. However, in areas with steeper topography, such as between milepost (MP) 13 and MP 14, the TCE would have to be 100 feet (30.5 m) wide. TCEs would be restored to their original uses after construction. Row crops or natural vegetation would be allowed to grow within the permanent pipeline ROW.

The final alignment of the pipeline within the proposed ROWs would be determined by detailed engineering design and analysis conducted by SoCalGas; until that alignment is known, the precise land ownership and location within public or private ROWs would not be known, and the locations of the TCEs could not be determined. Permanent easements and TCEs would be required outside of private and public road ROWs. Permanent easements would range between 25 and 50 feet (7.6 and 15.2 m), depending on site-specific conditions. Nevertheless, SoCalGas would attempt to use

existing farm roads and, where necessary, acquire easements immediately adjacent to farm roads to minimize disturbance to active agricultural fields.

Once the construction schedule has identified when agricultural field crossings would occur, SoCalGas would engage in preconstruction discussions with the farmer/landowner to identify opportunities to minimize impacts on crops, planting, and harvesting. In some cases, however, the impacts may not be able to be minimized (Boven 2005; Abel 2006). The procedures noted below would be followed where possible when installing the pipelines in agricultural lands.

Preconstruction Planning Measures

- Schedule construction to begin immediately after harvest or before planting if the construction and planting/harvest schedules coincide closely enough to not compromise the overall pipeline construction completion schedule;
- Depending on the crop, coordinate harvest within the TCE workstrip first, thus making that area available for construction; and
- Depending on the crop, delay planting of the crop within the TCE workstrip until after the construction spread has passed and the ROW is restored. This would reduce the farmer's seed/crop and labor costs and would minimize impacts on production.

Impact Minimization Measures During Construction

- If construction timing cannot be worked out, the TCE would be delineated, and the farmer could agree to not plant the TCE workstrip or to plant only to the boundary of the TCE workstrip. This would reduce the farmer's seed/crop and labor costs and limit impacts on production;
- If crops must be removed, the farmer would either remove them or let the pipeline construction contractor remove them;
- Younger tree crops would be removed and boxed for replanting;
- Mature trees would be removed to provide adequate TCE; however, only the minimum amount of mature trees would be removed from the construction ROW; and
- Topsoil segregation of the upper 12 inches of topsoil would help protect soil productivity.

Post-Construction Restoration Measures

- Segregated topsoil would be replaced;
- Substructures, such as drain tiles and irrigation systems, would be protected during construction and replaced if damaged;

- Grade would be restored to match the surrounding field for drainage. Often the farmer will grade or employ a company to perform the precision grading. The pipeline construction contractor would reimburse the farmer for the restoration expenses; and
- The farmer would be compensated to replace damaged or removed crops (Boven 2005).

Impact AGR-1: Temporary Loss of Agricultural Land

Construction activities could temporarily cause a loss of agricultural land, crops, or crop production (CEQA Class II; NEPA minor adverse, short-term).

The Prime Farmland soils and Farmland of State Importance soils that the Center Road Pipeline and its alternatives would pass through are identified in Table 4.5-5.

Table 4.5-5 Prime Farmland Soils and Farmland Soils of Statewide Importance Temporarily Disturbed and/or Permanently Converted during Construction and Operations

	Prime Farmland Soils (acres/hectares)		Farmland Soils of Statewide Importance (acres/hectares)		Total Agricultural Soil (acres/hectares)	
	Disturbed[a]	Converted[b]	Disturbed	Converted[b]	Disturbed	Converted[b]
Proposed Center Road Pipeline Route	40.2 (16.3)	<1/<0.4	89.9 (36.4)	0/0	130.1(52.7)	<1/<0.4
Center Road Pipeline Alternative 1	96.3 (39.0)	<1/<0.4	43.5 (17.6)	0/0	139.8(56.6)	<1/<0.4
Center Road Pipeline Alternative 2	40.2 (16.3)	<1/<0.4	84.8 (34.3)	0/0	125.0(50.6)	<1/<0.4
Center Road Pipeline Alternative 3	39.8 (16.1)	<1/<0.4	77.6 (31.4)	0/0	117.3(47.5)	<1/<0.4
Santa Barbara Channel/Mandalay Shore Crossing/ Gonzales Road Pipeline Alternative	97.3 (39.4)	<1/<0.4	7.8 (3.1)	0/0	105.0 (42.5)	<1/<0.4
Line 225 Pipeline Loop	48.1 (19.5)	0/0	0/0	0/0	48.1 (19.5)	0/0
Line 225 Pipeline Loop Alternative	11.6 (4.7)	0/0	0/0	0/0	11.6 (4.7)	0/0

Note:

[a] Estimated number of disturbed acres was based on the anticipated TCE of 80-feet for each pipeline route.

[b] NRCS and Ventura County determination of significant impact is based on the number of acres of Prime Farmland or Farmland of Statewide Importance that is converted from agricultural to non-agricultural uses based on the anticipated size of permanent structures and surrounding land taken out of agricultural production.

The Center Road Pipeline would temporarily disturb approximately 47.6 acres (19.3 ha) of Farmland of Statewide Importance and approximately 25 acres (10.1 ha) of Prime

Farmland soils. Orchard trees would be removed using a bulldozer. SoCalGas would try to salvage as many orchard trees as possible, especially the small-diameter citrus trees, and replant them. However, no large, deep-rooted trees would be allowed to grow within 15 feet (4.6 m) of the pipeline in the permanent pipeline ROW. The permanent pipeline ROW would vary from 25 feet to 50 feet in width. Approximately 2,400 orchard (avocado and citrus) trees would be removed during the pipeline installation (see Table 4.5-6). This is an overestimation of trees that could be removed because it includes orchard trees on either side of the roadway. Construction would occur only on one side of the roadway. However, since the exact alignment is not known, it is not possible to provide a more accurate estimate of orchard trees that would need to be removed temporarily or permanently.

Table 4.5-6 Approximate Number of Orchard Trees That Would Be Temporarily/Permanently Removed

Proposed Center Road Pipeline Route	Center Road Pipeline Route Alternative 1	Center Road Pipeline Route Alternative 2	Center Road Pipeline Route Alternative 3	Santa Barbara Channel/Mandalay Shore Crossing/Gonzales Road Alternative
2,400	1,700	2,100	2,100	2,100

Note: These numbers are very conservative and represent the worst possible impacts on orchard trees. Since the exact location of the pipeline alignment is unknown at this time, these numbers include all possible orchard trees that could be removed on either side of the roadway. Most routes have an 80-foot ROW on either side of the roadway. Certain parts of proposed routes have a 100-foot ROW on either side of the roadway. The actual pipeline route would be on only one side of the road; therefore, the actual number of trees disturbed or removed could be significantly less.

The Line 225 Pipeline Loop would cross an estimated 30.1 acres (12.2 ha) of Prime Farmland soils; however, none of these lands are in agricultural production.

Construction activities would occur over a relatively short period of time (approximately nine months); however, agricultural land in the construction ROW would be taken out of production for this period and therefore could miss a growing season. Typically, this period is two production cycles for the field. For sod farms, this may be a few months. For other crops, it could be a year. The Applicant or its designated representative has agreed to compensate farmers for their potential losses for fields that are taken out of production as a result of construction. The details of the compensation are described in AGR AM-1a.

Approximately 2.1 miles (3.4 km) of the proposed Center Road Pipeline route would cross through or abut agricultural lands that are part of the Williamson Act, according to the City of Oxnard 2020 General Plan (1990). These lands could not be cultivated during construction but would return to agricultural use after completion of construction activities; therefore, there would be no significant impact on Williamson Act lands. Based on 2004 aerial photographs, there are no orchards on the Williamson Act lands crossed by this route. There are no known agricultural lands or Williamson Act lands along the proposed Line 225 Pipeline Loop; therefore, no agricultural lands would be converted to non-agricultural uses (Impact Sciences 2004). No project-related

aboveground facilities would be constructed on Williamson Act preserved agricultural lands; therefore, no Williamson Act lands would be converted from agricultural use.

The presence of a natural gas transmission pipeline has minimal impact on agricultural uses on or near the pipeline ROW, except in orchards. High-pressure natural gas transmission pipelines are present in Oxnard, with some sections routed through existing croplands; for example, the existing high-pressure pipeline routed along Del Norte Boulevard extends southward across 5th Street through agricultural lands. The proposed new pipelines would be buried to a minimum depth of 36 inches of soil covering the top of the piping. Once installed, the only areas taken out of crop production would be very small plots where the aboveground pipeline markers would be located.

Operation and maintenance of the pipeline, in general, would not involve activities on the surface. If the pipeline needs to be accessed from the surface, the impacts would be similar to those associated with installation of the pipeline, and similar mitigation measures would be necessary. For example, a TCE may need to be established; therefore, crops may need to be removed. During maintenance operations, few trees are likely to be removed because the permanent easement would not be cultivated with trees.

The Applicant has incorporated the following measures into the proposed Project:

AM AGR-1a. **Compensation for Temporary and Permanent Loss of Agricultural Land, Crop Loss, Future Loss of Production, and Other Negative Impacts.** In compliance with California Government Code § 7267 et seq., the Applicant or its designated representative would make every reasonable effort to acquire easements (temporary and permanent) expeditiously by negotiation. The easement rights would be appraised before the initiation of negotiations, and the property owner or the property owner's designated representative would be given an opportunity to accompany the appraiser during the inspection of the property. SoCalGas would establish an amount that it believes to be just compensation for the easement rights, based upon the appraisal. SoCalGas would provide the property owner with a written statement and summary of the basis for the amount it established as just compensation, which amount would not be less than the appraised value of the easement rights. The appraisal process would consider the value of the easement rights being acquired, and where applicable, crop loss, future loss of production, and any other negative impacts that SoCalGas' acquisition and use of the easement areas would have upon agricultural operations.

AM AGR-1b. **Coordinate Pipeline Installation with Farmers**. The Applicant or its designated representative would schedule construction to begin immediately after harvest or before planting if the construction and

planting/harvest schedules coincide closely enough to not compromise the overall pipeline construction completion schedule. The Applicant or its designated representative would let the farmer decide whether the farmer or the Applicant's contractor would remove seed/crops.

AM AGR-1c. **Post-Construction Restoration Measures.** The Applicant or its designated representative would protect all substructures, such as drain tiles or other types of irrigations systems, during construction and replace any substructures if damaged. The Applicant or its designated representative would restore the grade of the TCE to match the surrounding field for drainage or compensate the farmer if the farmer chooses to have a contractor perform precision grading.

Mitigation Measures for Impact AGR-1: Temporary Loss of Agricultural Land

MM AGR-1d. **Minimize Orchard Tree Removal.** Recognizing that no trees can grow within 15 feet (4.6 m) of the pipeline, the Applicant or its designated representative shall remove, box, maintain, and replant small orchard trees in the area between the TCE and the permanent ROW. The Applicant or its designated representative shall minimize the number of mature trees removed.

Although implementation of this Project would cause the temporary loss of agricultural production along the pipeline corridor, the potential financial effect on farmers would be minimized through the implementation of AM AGR-1a. In addition, the potential effects of the Applicant's or its designated representative's use of the TCE would be minimized through the implementation of AM AGR-1b, AM AGR-1c, and MM AGR-1d. These measures would ensure that the land is restored to its original condition and that crop loss would be minimized. Farmers would receive compensation for any crop loss. Implementation of these measures would reduce impacts on agricultural land to below their significance criteria.

Impact AGR-2: Permanent Conversion of Agricultural Land to Non-Agricultural Use

Operational activities could cause a loss of agricultural land, crops, or crop production. Construction of permanent facilities could cause a permanent loss of agricultural land, crops, or crop production. Agricultural land that is preserved under the Williamson Act could be permanently converted from agricultural land to non-agricultural land. Prime Farmland or Farmland of Statewide Importance could be converted to non-agricultural uses (CEQA Class I; NEPA major adverse, long-term).

The Center Road Valve Station would expand by 4,250 square feet (395 square meters), or approximately 0.1 acre (0.04 ha), resulting in the permanent removal of

approximately 40 citrus trees. Soils in this area are classified as Prime Farmland. No Williamson Act lands would be converted, and no agricultural land in the coastal zone would be permanently converted to non-agricultural uses. Under the Ventura County guidelines, because the Project would convert less than 1 acre (0.4 ha) of Prime Farmland soils to non-agricultural use, the impact would be adverse, but less than significant.

The proposed permanent structures on Line Loop 225 would be installed at the existing valve stations; therefore, there would be no permanent conversion of agricultural land to non-agricultural uses.

The NRCS has evaluated the proposed routes and determined that there would be no significant impact on agricultural lands under its jurisdiction (Jewett 2004; Nguyen 2004; James 2005). However, under the California Environmental Quality Act (CEQA) guidelines, any conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance soils to non-agricultural use represents a significant impact. The conversion of 0.1 acre of land at the Center Road Valve Station is a significant impact that cannot be mitigated. This impact would be a Class I impact.

Impact AGR-3: Topsoil Loss, Mixing, and/or Compaction

Construction activities could result in topsoil and subsoil mixing, soil compaction, and/or introduction of weed/invasive species, thereby reducing agricultural productivity (CEQA Class II; NEPA minor adverse, short-term).

Where construction occurs in agricultural areas, the concentrated movement of construction equipment could result in mixing topsoil with the relatively infertile subsoil, thereby diluting the productivity of the soil. The use of heavy equipment could also result in rutting, which could lead to mixing of topsoil and subsoil, especially in excessively wet conditions. Inadequate compaction of the trench backfill could result in soil subsidence over the pipeline and thereby alter drainage patterns, while severe over-compaction could impede vegetation growth because of restricted movement of air and water into the soil.

Soil compaction is a problem generally associated with fine-texture and/or organic-rich soils with high moisture content. Soils most prone to compaction are generally somewhat poorly drained and often hydric. Compaction can reduce porosity, infiltration, and aeration of the soil. These properties are important for plant health. The most productive part of the soil column is the topsoil or top 5 to 12 inches (0.3 m) of soil. If the topsoil is mixed with subsoil, then its productivity is diminished.

Approximately 90.8 acres (36.7 ha) of agricultural soils would be disturbed by the construction of the Center Road Pipeline, based on an average 80-foot (24.4 m) ROW for most of the route and a 100-foot ROW (30.5-meter) for the last portion of the pipeline route.

Not only could construction activities result in the compaction of soil, but invasive species could be introduced by equipment that is not thoroughly cleaned. Introduction

of any plant species other than the one grown by the farmer would cause the farmer additional effort to eradicate it.

Approximately 30.1 acres (12.2 ha) of agricultural soil would be disturbed (based on an average 80-foot [24.4 m] ROW) along the proposed Line 225 Pipeline Loop; however, loss of soil productivity is less of a concern for this route because it would traverse urban, residential, commercial, and industrial lands, and none of the undeveloped areas are agricultural.

The Applicant has incorporated the following measure into the Project:

AM TerrBio-4a. Weed Management Plan would apply to this impact (see Section 4.8, "Terrestrial Biology").

Mitigation Measures for Impact AGR-3: Topsoil Mixing and Compaction

MM AGR-3a. Topsoil Salvage and Replacement. The Applicant or its designated representative shall ensure that the upper 12 inches (0.3 m) of topsoil (or less, depending on the existing depth of the topsoil) is salvaged, segregated from the rest of the soil, and replaced on top of the disturbed areas and replaced wherever the pipeline is trenched.

MM AGR-3b. Landowner Compensation for Soil Productivity Losses. Prior to construction, the Applicant or its designated representative shall negotiate with landowners regarding measures to ensure that soil productivity is maintained and that the criteria for determining loss of soil productivity and the terms for compensation for such loss are determined.

Implementation of AM TerrBio-4a would ensure that invasive/weed species would not be introduced into the agricultural fields. Topsoil salvage and replacement would ensure that the soil disturbed by the Project would be maintained to ensure its continued agricultural productivity. If soil productivity losses still were to occur, implementation of MM AGR-3b would ensure that farmers would be adequately compensated for their losses. Implementation of these mitigation measures would reduce this potential impact to below its significance criteria.

Impact AGR-4: Dust Deposition

Dust generated during construction could be deposited on adjacent agricultural lands with planted crops, temporarily reducing productivity (CEQA Class II; NEPA minor adverse, short-term).

Dust generated during grading and construction activities could adversely impact agricultural production by reducing the ability of plants to photosynthesize. If a plant's ability to photosynthesize is reduced, then it is potentially more susceptible to pest infestation.

Mitigation Measures for Impact AGR-4: Dust Deposition

MM AIR-2b. **Construction Fugitive Dust Plan** would apply to this impact (see Section 4.6, "Air Quality").

MM AGR-4a. **Dust Suppression Water Quality.** For dust suppression, the Applicant or its designated representative shall use potable water sources or water sources approved for discharge near agricultural uses. Water used on agricultural fields shall not be treated with chemicals such that it could adversely affect agricultural fields.

Implementation of the Construction Fugitive Dust Plan would minimize the generation of fugitive dust; therefore, the potential adverse effects of the presence of fugitive dust on agricultural fields would be minimized. Implementation of MM AGR-4a would ensure that water applied in the implementation of the Construction Fugitive Dust Plan would not adversely effect agricultural production. With the minimization of fugitive dust generation, the potential effects of dust deposition impacts would be reduced to below significance criteria.

Impact AGR-5: Loss of Tree Rows

Loss of tree rows could reduce agricultural productivity (CEQA Class II; NEPA minor adverse, short-term).

Tree rows provide a windbreak for agricultural fields, decreasing stresses on individual plants and thus allowing them to grow with fewer disturbances. Along the Center Road Pipeline route, approximately 8,372 linear feet of tree rows would potentially be disturbed (see Table 4.5-7). There are no known tree rows along the Line 225 Pipeline Loop.

Table 4.5-7 Length of Tree Rows Potentially Disturbed during Pipeline Installation

Pipeline Route	Linear Feet of Tree Row Potentially Disturbed
Center Road Pipeline Proposed Route	6,170
Center Road Pipeline Alternative Route 1	7,022
Center Road Pipeline Alternative Route 2	2,962
Center Road Pipeline Alternative Route 3	13, 691

Source: Entrix 2005.

Note: Trees include eucalyptus, palm, ironwood, and ornamentals but not orchard trees.

Mitigation Measure for Impact AGR-5: Loss of Tree Rows

MM TerrBio-2g. **Tree Avoidance and Replacement** applies to this impact (see Section 4.8, "Biological Resources – Terrestrial").

Implementation of this mitigation measure would require the Applicant to replace tree rows at ratio of 1:1. Replacement trees would be 15-gallon trees approximately 8 to 10 feet in height. The type of tree planted would be approved by the CDFG and/or the

landowner. Therefore, the potential impact of the removal of tree rows would be limited to the period of construction and would be reduced to below its significance criteria in the long-term.

Impact AGR-6: Impacts from a Leak or Fire Associated with the Natural Gas Transmission Line

If the natural gas transmission line leaked and/or were ignited, the resulting fire could cause the loss of crops or the contamination of the soil in the vicinity of the leak or fire (CEQA Class II; NEPA minor adverse, short-term).

A leak or rupture in any natural gas transmission line would require immediate response by fire and police departments and SoCalGas to ensure that the area is secured, i.e., people have been evacuated and potential sources of ignition are kept well away. This could disrupt nearby agricultural activities by preventing access to the fields for a number of hours. Short-term exposure of nearby crops to a natural gas cloud would not be expected to damage the crops and would be expected to be minimal due to the buoyancy of the gas. Plants in the immediate vicinity of the pipe rupture would be lost.

Should a natural gas cloud be ignited, it could cause secondary fires of dry vegetation and fire and heat damage that, depending on the type and maturity of the nearby crops, could result in localized crop losses. The potential distance from the pipeline for damaging effects on crops would also vary depending on the type and maturity of the crop at the time of the incident: mature or nearly mature fruits or berries would sustain significant damage at radiant heat levels less than 5,000 British thermal units per hour per square foot (Btu/hr-ft^2) (the level that defines the "potential impact radius" for public safety impacts as described in Title 49 Code of Federal Regulations Part 192, Subpart O). Although not acutely toxic, soot from the burning of any material in the vicinity of the fire could contaminate nearby crops and would likely require destruction of soot-contaminated plants and/or fruit.

With or without ignition of a natural gas cloud, localized but temporary impacts on nearby cropland would occur due to the presence of emergency and repair vehicles and equipment that would respond and excavate and repair the damaged pipeline. The vehicles and emergency equipment used to address the leak may compact the soil surrounding the area. SoCalGas would be responsible for ensuring that the soil would be decompacted equivalent to adjacent undisturbed areas after the emergency response is completed.

The Applicant has incorporated the following measures into the proposed Project:

AM PS-3a. **More Stringent Pipeline Design** (see Section 4.2, “Public Safety: Hazards and Risk Analysis”).

AM PS-4a. **Class 3 Pipeline Design Criteria** would apply to this impact (see Section 4.2, “Public Safety: Hazards and Risk Analysis”).

Mitigation Measures for Impact AGR-6: Impacts from a Leak or Fire Associated with the Natural Gas Transmission Line

MM AGR-6a. Restoration After a Natural Gas Transmission Line Accident. The Applicant or its designated representative shall restore the area that was either contaminated or burned as a result of a breach in the natural gas transmission line.

MM PS-3c. Areas Subject to Accelerated Corrosion, Cathodic Protection System (see Section 4.2, "Public Safety: Hazards and Risk Analysis").

MM PS-4b. Pipeline Integrity Management Program would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis").

MM PS-4c. Install Additional Mainline Valves Equipped with Either Remote Valve Controls or Automatic Line Break Controls (see Section 4.2, "Public Safety: Hazards and Risk Analysis").

Implementation of the public safety mitigation measures outlined above would reduce the potential for a leak or fire to occur and would reduce the potential impacts should a leak or fire occur. Implementation of MM AGR-6a would ensure that the area would be restored to its original condition should a leak or fire cause damage or contamination. Impacts of this type would be temporary and the effects could be mitigated to below significance criteria over the long-term.

4.5.5 Alternatives

4.5.5.1 No Action Alternative

As explained in greater detail in Section 3.4.1, under the No Action Alternative, MARAD would deny the license for the Cabrillo Port Project, the Governor of California would disapprove the Project under the provisions of the DWPA, or the CSLC would deny the application for the proposed lease of State tide and submerged lands for a pipeline right-of-way. Any of these actions or disapproval by any other permitting agency could result in the Project not proceeding. The No Action Alternative means that the Project would not go forward and the FSRU, associated subsea pipelines, and onshore pipelines and related facilities would not be installed. Accordingly, none of the potential impacts on agriculture and soil identified for the construction and operation of the proposed Project would occur.

Specifically, potential impacts that would not occur if the No Action Alternative is implemented include the following:

- Temporary loss of agricultural land, crops, or crop production along approximately 2.1 miles (3.4 km) of the proposed Center Road Pipeline route during the nine months of construction activities;

- Permanent conversion of approximately 0.1 acre (0.04 ha) of agricultural land to non-agricultural use and permanent removal of approximately 40 citrus trees due to expansion of the Center Road Valve Station;
- Topsoil and subsoil mixing, soil compaction, and/or introduction of weed/invasive species during pipeline construction, thereby reducing agricultural productivity;
- Increase in dust deposition during construction, which could reduce productivity on adjacent agricultural lands;
- The potential disturbance or loss of approximately 8,372 linear feet of tree rows along the Center Road Pipeline route that provide agricultural productivity and windbreaks that decrease stresses on individual plants in agricultural fields; and
- Damage or loss to crops due to contamination of agricultural soil or fire resulting from a natural gas transmission line leak or rupture.

Since the proposed Project is privately funded, it is unknown whether the Applicant would proceed with another energy project in California; however, should the No Action Alternative be selected, the energy needs identified in Section 1.2, "Project Purpose, Need and Objectives," would likely be addressed through other means, such as through other LNG or natural gas-related pipeline projects. Such proposed projects may result in potential impacts on agriculture and soil similar in nature and magnitude to the proposed Project as well as impacts particular to the respective configurations and operations of each project; however, such impacts cannot be predicted with any certainty at this time.

4.5.5.2 Alternative DWP Location – Santa Barbara Channel/Mandalay Shore Crossing/Gonzales Road Pipeline

Siting of the Project in the Santa Barbara Channel would result in impacts similar to those of the proposed Project, i.e., topsoil mixing and dust deposition. However, there are fewer miles of land in agricultural production (see Table 4.5-8); therefore, fewer acres of land in agricultural production would be disturbed (see Table 4.5-9). The same amount of land would be converted from agricultural land to non-agricultural land as for the proposed Project. Approximately 1.2 miles (1.9 km) of this route would cross through or abut agricultural lands that are part of the Williamson Act. Based on 2004 aerial photographs, there are no orchards on the Williamson Act lands crossed by this route . These lands could not be cultivated during construction but would return to agricultural use after completion of construction activities; therefore, there would be no significant impact on Williamson Act lands.

Therefore, this alternative would have fewer impacts on agricultural resources than the proposed Project. However, more acres of Prime Farmland soils (61.6 acres [24.9 ha]) would be disturbed, compared with those affected by the proposed Project (21.8 acres [8.8 ha]) (see Table 4.5-9).

Table 4.5-8 Representative Agriculture Present along the Santa Barbara Channel/Mandalay Shore Crossing/Gonzales Road Pipeline

Milepost	Representative Agriculture
0-1	Strawberries, Fallow
1-2	Fallow, Sod, Orchard
2-3	Sod, Orchard, Strawberries, Tree Rows, Row Crops
3-4	Row Crops, Fallow, Sod
4-5	NA
5-6	NA
6-7	Strawberries, Row Crops
7-8	Row Crops, Fallow
8-9	Sod, Fallow
9-10	Fallow, Strawberries, Orchard
10-11	Fallow, Orchard
11-12	Fallow, Orchard
12-Center Road Valve Station	Strawberries, Row Crops, Orchard

Source: Ecology and Environment, Inc. 2004.

Table 4.5-9 Santa Barbara Channel/Mandalay Shore Crossing/Gonzales Road Pipeline Soils

Miles / Kilometers	Soil Association	Soil Capability/ Grade[a,b]	Farmland Soil Type[c]	Acres (Hectares) (75-foot [23 meter] Right-of-Way)	Acres (Hectares) (80-foot [24 meter] Right-of-Way)
3.28 (5.3)	Anacapa Sandy Loam (0-2 Percent Slopes) (AcA)	IIs-4/1	Prime	29.82 (12.07)	31.81 (12.87)
0.83 (1.3)	Anacapa Sandy Loam (2-9 Percent Slopes) (AcC)	IIe-1/1	Prime	7.55 (3.05)	8.05 (3.26)
0.37 (0.6)	Camarillo Loam (Cd)	IIw-2/2	Statewide Importance	3.36 (1.36)	3.59 (1.45)
0.21 (0.3)	Camarillo Sandy Loam (Cc)	IIw-2/2	Statewide Importance	1.91 (0.77)	2.04 (0.82)
0.68 (1.1)	Coastal Beaches (CnB)	VIIIw-4/NA	Other	6.18 (2.50)	6.59 (2.67)
0.18 (0.3)	Cropley Clay (0-2 Percent Slopes) (CyA)	IIs-5/3	Prime	1.64 (0.66)	1.75 (0.71)
0.14 (0.2)	Garretson Loam (2-9 Percent Slopes) (GaC)	IIe-1/1	Prime	1.27 (0.52)	1.36 (0.55)
0.37 (0.6)	Gullied Land (GxG)	VIIIe-1/NA	Other	3.36 (1.36)	3.59 (1.45)
0.11 (0.2)	Hueneme Loamy Sand, Loamy Substrate (Hm)	IIw-2/3	Prime	1.00 (0.40)	1.07 (0.43)

Table 4.5-9 Santa Barbara Channel/Mandalay Shore Crossing/Gonzales Road Pipeline Soils

Miles / Kilometers	Soil Association	Soil Capability/ Grade[a,b]	Farmland Soil Type[c]	Acres (Hectares) (75-foot [23 meter] Right-of-Way)	Acres (Hectares) (80-foot [24 meter] Right-of-Way)
0.56 (0.9)	Hueneme Sandy Loam (Hn)	IIw-2/2	Prime	5.09 (2.06)	5.43 (2.20)
0.56 (0.9)	Metz Loamy Sand (0-2 Percent Slopes) (MeA)	IIIs-4/2	Prime	5.09 (2.06)	5.43 (2.20)
0.37 (0.6)	Mocho Loam (0-2 Percent Slopes) (MoA)	I-1/1	Prime	3.36 (1.36)	3.59 (1.45)
3.1 (5)	Pico Sandy Loam (0-2 Percent Slopes) (PcA)	IIs-4/1	Prime	28.18 (11.41)	30.06 (12.17)
0.35 (0.6)	Pico Sandy Loam (2-9 Percent Slopes) (PcC)	IIe-1/2	Prime	3.18 (1.29)	3.39 (1.37)
0.37 (0.6)	Rincon Silty Clay Loam (2-9 Percent Slopes) (RcC)	IIe-3/3	Prime	3.36 (1.36)	3.59 (1.45)
0.32 (0.5)	Sorrento Loam (0-2 Percent Slopes) (SwA)	I-1/1	Prime	2.91 (1.18)	3.10 (1.26)
0.11 (0.2)	Sorrento Loam (2-9 Percent Slopes) (SwC)	IIe-1/1	Statewide Importance	1.00 (0.40)	1.07 (0.43)
0.14 (0.2)	Sorrento Silty Clay Loam (0-2 Percent Slopes) (SxA)	I-1/1	Other	1.27 (0.52)	1.36 (0.55)
0.11 (0.2)	Zamora Loam (2-9 Percent Slopes) (ZmC)	IIe-1/1	Statewide importance	1.00 (0.40)	1.07 (0.43)
		Total	**Statewide Importance**	**7.27 (2.94)**	**7.76 (3.14)**
		Total	**Prime**	**91.18 (36.90)**	**97.26 (39.36)**

Source: U.S. Department of Agriculture 1970a.

Notes:

[a] Soil Capability Designations:

- i Soils with few limitations that restrict their use.
- ii Soils with moderate limitations that reduce the choice of plants or that require moderate conservation practices.
- iii Soils that have severe limitations that reduce the choice of plants.
- viii Soils and landforms that have limitations that preclude their use for commercial plant production.
- e Limitation due to erosion unless close-growing plant cover is maintained.
- w Water in or on the soil interferes with plant growth or cultivation (corrected by artificial drainage).
- s Soil is limited mainly because it is shallow, droughty, or stony.

[b] Grades range from 1 to 6, with Grade 1 soils having few or no limitations that restrict use for crops and Grade 6 soils that are not suited for farming.

- 1 Potential or actual erosion hazard.
- 2 Poor drainage or overflow hazard.
- 3 Slow or very slow permeability in subsoil or substratum.
- 4 Coarse or gravelly texture.
- 5 Fine or very fine texture.

[c] California Department of Conservation 1998.

Fewer acres of soils of Statewide Importance (4.8 acres [1.94 ha]) would be disturbed, compared with the proposed Project (57.2 acres [23.1 ha]). However, like the proposed route, the Center Road Valve Station would expand by 4,250 square feet (395 square meters), or approximately 0.1 acre (0.04 ha), resulting in the permanent removal of approximately 40 citrus trees. Soils in this area are classified as Prime Farmland. The NRCS has determined that there would be no significant impact on agricultural lands under its jurisdiction (Jewett 2004). In addition, Ventura County does not consider conversion of this amount of agricultural land to be significant, but any conversion of prime farmland to non-agricultural use is considered significant under CEQA criteria. Therefore, this is a Class I impact.

Approximately, 2,098 orchard trees could be removed during the construction of this alternative; however, as discussed before, this is an overly conservative estimate and represents trees within the ROW on either side of the roadway. This is not an estimate of the number of orchard trees that would be permanently removed.

Since the impacts would be of a similar nature as those for the proposed pipeline route, all mitigation measures would be applied to this alternative to ensure that farmers would be adequately compensated for the use of their land and any crop losses. These mitigation measures would ensure that agricultural land would be restored and construction impacts would be reduced to a level below its significance criteria; however, there would be a permanent conversion of agricultural land to non-agricultural use which results in a Class I impact.

4.5.5.3 Alternative Onshore Pipeline Routes

Center Road Pipeline Alternative 1

Center Road Pipeline Alternative 1 would cross less active farmland than the proposed Center Road Pipeline. This alternative would adjoin land in agricultural use for 63 percent of its course. As a result, the potential for impacts on agricultural resources would be the lowest under this alternative. Of all the Center Road Pipeline alternatives, Alternative 1 would also cause the least disturbance to soils classified as Farmland of Statewide Importance, affecting 27.2 acres (11 ha). However, Center Road Pipeline Alternative 1 would temporarily disturb the greatest number of acres of soils classified as Prime Farmland, estimated to be approximately 60.2 (24.4 ha).

Approximately 0.9 miles (1.4 km) of this route would cross through or abut land preserved under the Williamson Act (City of Oxnard 1990); however, none of these lands would be permanently converted to non-agricultural lands and none of them are cultivated with orchards. There would be no difference between this alternative and the proposed Center Road Pipeline in the amount of prime farmland agricultural soils permanently converted to non-agricultural uses and, like the proposed Center Road Pipeline route, this would represent a Class I impact under the CEQA significance criteria. The NRCS has determined that there would be no significant impact on agricultural lands under their jurisdiction from this alternative (Jewett 2004). In addition,

the conversion of this amount of agricultural land under Ventura County significance criteria is considered not significant.

A greater length of tree rows would be temporarily disturbed under this alternative than the proposed Center Road Pipeline. Fewer orchard trees would have to be temporarily or permanently removed under this alternative (see Table 4.5-7 above). Since the impacts would be similar to those for the proposed Center Road Pipeline, all mitigation measures would be applied to this alternative to ensure that farmers would be adequately compensated for the use of their land and any crop losses. These mitigation measures would ensure that agricultural land would be restored, and construction impacts would be reduced to a level below its significance criteria, except for the permanent conversion of prime farmland agricultural soil which represents an unmitigable Class I impact.

Center Road Pipeline Alternative 2

Much of this alternative route is located in agriculturally dominated areas; 89.7 percent of the land along the route is in agricultural use. As a result, this alternative would have impacts on agricultural resources similar to those under the Center Road Pipeline. Center Road Pipeline Alternative 2 would affect approximately 25.2 acres (10.2 ha) of Prime Farmland soils and approximately 52.3 acres (21.2 ha) of Farmland of Statewide Importance soils. There would be no difference between this alternative and the proposed Center Road Pipeline in the amount of prime farmland agricultural soils permanently converted to non-agricultural uses and like the proposed Center Road Pipeline route, this would represent a Class I impact under CEQA significance criteria. However, the NRCS has determined that there would be no significant impact on agricultural lands under their jurisdiction from this alternative (Jewett 2004). In addition, the conversion of this amount of agricultural land under Ventura County significance criteria is not considered significant,

Approximately 1.9 miles (3.1 km) of this route would cross through or abut Williamson Act land. Like the proposed route, none of this land would be converted from agricultural use. None of the Williamson Act lands that would be crossed by this route are cultivated with orchards. A shorter length of tree rows would be temporarily disturbed in this alternative than the proposed route (see Table 4.5-8 above). Fewer orchard trees would have to be temporarily or permanently removed under this alternative (see Table 4.5-7 above). Since the impacts would be of a similar nature as those for the proposed Center Road Pipeline route, all mitigation measures would be applied to this alternative to ensure that farmers would be adequately compensated for the use of their land and any crop losses. These mitigation measures would ensure that agricultural land would be restored and construction impacts would be reduced to a level below its significance criteria, except for the permanent conversion of prime farmland agricultural soil which represents an unmitigable Class I impact.

Center Road Pipeline Alternative 3

This alternative route is located in agriculturally dominated areas: approximately 90 percent of the land along the route is in agricultural use. This alternative would have impacts on agricultural resources similar to those under the proposed Center Road Pipeline because the majority of the route, except for the last 2.1 miles (3.4 km) is exactly the same and the proposed route. This alternative would affect approximately 25.0 acres (10.1 ha) of Prime Farmland soils and approximately 47.6 acres (19.3 ha) of Farmland of Statewide Importance soils. There would be no difference between this alternative and the proposed Center Road Pipeline in the amount of prime farmland agricultural soils permanently converted to non-agricultural uses and like the proposed Center Road Pipeline route, this would represent a Class I impact under CEQA significance criteria. However, the NRCS has determined that there would be no significant impact on agricultural lands under their jurisdiction from this alternative (Jewett 2004). In addition, the conversion of this amount of agricultural land under Ventura County significance criteria is not considered significant.

The amount of Williamson Act land that would be disturbed by this alternative would be the same as that of the proposed Center Road Pipeline and, like the proposed route, none of this land would be converted from agricultural use. A shorter length of tree rows would be temporarily disturbed in this alternative than the proposed route (see Table 4.5-7 above). Fewer orchard trees would have to be temporarily or permanently removed under this alternative (see Table 4.5-6 above). Since the impacts would be similar to those for the proposed pipeline route, all mitigation measures would be applied to this alternative to ensure that farmers would be adequately compensated for the use of their land and any crop losses. These mitigation measures would ensure that agricultural land is restored, and construction impacts would be reduced to a level below significance criteria in the long-term, except for the permanent conversion of prime farmland agricultural soil, which represents an unmitigable Class I impact.

Line 225 Pipeline Loop Alternative

This alternative would cross an estimated 7.3 acres (2.95 ha) of Prime Farmland soils and slightly in excess of 1 acre (0.4 ha) of Farmland of Statewide Importance soils. None of these lands are in agricultural use; therefore, there would be no agricultural lands taken out of production. The total acres of Prime Farmland and Farmland of Statewide Importance that would be disturbed cannot be compared with the number of acres disturbed under the proposed Line 225 Pipeline Loop because this alternative would cover only a part of the route. For the equivalent parts of the pipeline routes, this alternative would disturb slightly more Prime Farmland soils than the proposed route. The NRCS has determined that there would be no significant impact on agricultural lands under their jurisdiction from this alternative (Nguyen 2004). There would be no impacts on agricultural lands and although there would be similar impacts on soils classified as Prime Farmland or Farmland of Statewide Importance, the relevant mitigation measures would be those that are applicable to terrestrial biological resources such as MM TerrBio-2g, and AM TerrBio-4a. These measures would ensure

that soil is not lost due to erosion, as few trees as possible are removed, removed trees are replaced, and weeds are not introduced into the area.

4.5.5.4 Alternative Shore Crossing/Pipeline Route

Arnold Road Shore Crossing/Arnold Road Pipeline Alternative

This alternative would use horizontal directional boring (HDB) to transit to the beach and beach dunes. The pipeline would be trenched through approximately 1.5 miles (2.4 km) of Prime Farmland and Farmland of Statewide Importance soils to Hueneme Road. A total of 4.1 acres (1.66 ha) of Farmland of Statewide Importance soils would be disturbed, along with 3.1 acres (1.25 ha) of Prime Farmland soils (see Table 4.5-10). Most of the route is lined with agricultural fields. The comparable portion of the proposed route transits through an equivalent distance of soils of Farmland of State Importance; therefore, the impacts on agricultural resources and soils would be equivalent. No known orchard trees border this route. No known part of this shore crossing route would cross through or abut agricultural lands that are part of the Williamson Act. Since the impacts of the pipeline installation would be similar to those for the proposed pipeline route, all mitigation measures, except those for trees, would be applied to this alternative to ensure that farmers would be adequately compensated for the use of their land and any crop losses. These mitigation measures would ensure that agricultural land is restored and construction impacts are minimized. Thus, impacts on agriculture and soils would be reduced to below their significance criteria.

Table 4.5-10 Soil Association – Arnold Road Shore Crossing/Arnold Road Pipeline

Miles / Kilometers		Soil Association	Soil Capability/ Grade[a,b]	Farmland Soil Type[c]	Acres (Hectares) (75-foot [23 meter] Right-of-Way)		Acres (Hectares) (80-foot [24 meter] Right-of-Way)	
Disturbed during pipeline construction								
0.04	(0.1)	Coastal Beach	VIIIw/NA	Other	0.36	(0.15)	0.39	(0.16)
0.68	(1.1)	Camarillo Loam (Cd)	IIw-2/2	Statewide Importance	6.18	(2.50)	6.59	(2.67)
0.51	(0.8)	Hueneme Sandy Loam (Hn)	IIw-2/2	Prime	4.64	(1.88)	4.95	(2.00)
0.4	(0.6)	Tidal Flats (Ts)	VIIIw-6/NA	Other	3.64	(1.47)	3.88	(1.57)
Disturbed during metering station construction								
		Camarillo Loam (Cd)	IIw-2/2	Statewide Importance	3.7	(1.5)		
Permanent conversion								
		Camarillo Loam (Cd)	IIw-2/2	Statewide Importance	0.9	(0.4)		

Table 4.5-10 Soil Association – Arnold Road Shore Crossing/Arnold Road Pipeline

Miles / Kilometers	Soil Association	Soil Capability/ Grade[a,b]	Farmland Soil Type[c]	Acres (Hectares) (75-foot [23 meter] Right-of-Way)	Acres (Hectares) (80-foot [24 meter] Right-of-Way)

Source: U.S. Department of Agriculture 1970a.

Notes:

[a] Soil Capability designations:
- II Soils with moderate limitations that reduce the choice of plants or that require moderate conservation practices.
- W Water in or on the soil interferes with plant growth or cultivation (corrected by artificial drainage).
- 2 Poor drainage or overflow hazard.

[b] Grades range from 1 to 6, with Grade 1 soils having few or no limitations that restrict use for crops and Grade 6 soils that are not suited for farming.
- 1 Potential or actual erosion hazard.
- 2 Poor drainage or overflow hazard.
- 3 Slow or very slow permeability in subsoil or substratum.
- 4 Coarse or gravelly texture.
- 5 Fine or very fine texture.

[c] California Department of Conservation 1998.

Impact AGR-7 Alt: Potential for Use of Agricultural Land for Staging Areas

Under the Arnold Road Shore Crossing/Arnold Road Pipeline Alternative, construction activities associated with staging areas could temporarily cause a loss of agricultural land, crops, or crop production. Agricultural land that is preserved under the Williamson Act could be temporarily converted from agricultural land to non-agricultural land. Prime Farmland or Farmland of Statewide Importance soils would temporarily be converted to non-agricultural uses (CEQA Class II; NEPA minor adverse, short-term).

For construction of this alternative, a 400-foot (122 meters) by 400-foot (122 meters) staging area would be needed The proposed construction footprint would be a 3.7-acre (1.5 ha) area adjacent to Arnold Road approximately 0.5 miles from the HDB entry point (Entrix 2005). The location of the construction footprint would be on agricultural lands; therefore, temporary disturbance of agricultural fields would occur. Implementation of AM AGR-1b, AM AGR-1c, and MM AGR-1d would reduce the impact on farmers if they choose to allow their land to be used as a construction area. Through these mitigation measures and AM AGR-1a, the farmer would be compensated for the use of the land and the land would be subsequently restored after construction is completed.

Impact AGR-8 Alt: Permanent Conversion of Agricultural Land to Non-Agricultural Use.

Under the Arnold Road Shore Crossing/Arnold Road Pipeline Alternative, construction of permanent facilities could cause a permanent loss of agricultural land, crops, or crop production. Agricultural land that is preserved under the Williamson Act could be permanently converted from agricultural land to non-agricultural land. The pipeline corridor could convert Prime Farmland and

Farmland of Statewide Importance soils to non-agricultural uses (CEQA Class I; NEPA major adverse, long-term).

A metering station would be constructed on 200-foot (61 m) by 200-foot (61 m) area on agricultural field adjacent to Arnold Road for this alternative (Entrix 2005). The entire area needed for construction would be 40,000 square feet (0.9 acre; 0.4 ha). The proposed location is on agricultural lands that have soils that are classified as Farmland of Statewide Importance, but they are not Williamson Act lands. Under the Ventura County guidance criteria, conversion of this amount of land from agricultural to non-agricultural use is not significant. However, if this alternative is implemented with any of the other Center Road Pipeline routes to the Center Road Valve Station, there would be a cumulative loss of 1 acre of Prime/Farmland of Statewide Importance soils, which is significant under Ventura County guidance criteria. Under CEQA guidelines, any conversions of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use also represents a significant impact. Therefore, this would represent an unmitigable, Class I impact.

Point Mugu Shore Crossing/Casper Road Pipeline Alternative

This alternative would use HDB to transit to the beach, wetlands, and duck ponds; therefore surface soils would not be disturbed. The HDB turnaround point would be located on fill and therefore would not impact agricultural soils. North of the duck ponds, the pipeline would be trenched through approximately 1.5 miles (2.4 km) of Prime Farmland and Farmland of Statewide Importance soils to Hueneme Road. A total of 4.5 acres (1.82 ha) each of Farmland of Statewide Importance and Prime Farmland soils would be disturbed (Table 4.5-11). No known orchard trees or tree rows occur on this route. Approximately 0.3 miles (0.5 km) of this shore crossing route would cross through or abut agricultural lands that are part of the Williamson Act lands. These lands could not be cultivated during construction but would return to agricultural use after completion of construction activities; therefore, there would be no significant impact on Williamson Act lands. Since the impacts of the pipeline installation would be similar to those for the proposed pipeline route, all mitigation measures, except for those applicable to tree rows and orchard trees, would be applied to this alternative to ensure that farmers would be adequately compensated for the use of their land and any crop losses. These mitigation measures would ensure that agricultural land is restored and construction impacts would be reduced to below significance criteria.

Table 4.5-11 Soil Association – Point Mugu Shore Crossing/Casper Road Pipeline

Miles / Kilometers	Soil Association	Soil Capability/ Grade[a,b]	Farmland Type[c]	Acres (Hectares) (75-foot [23 meter] Right-of-Way)	Acres (Hectares) (80-foot [24 meter] Right-of-Way)
Disturbed during pipeline construction					
0.18 (0.3)	Camarillo Loam (Cd)	IIw-2/2	Statewide Importance	1.64 (0.66)	1.75 (0.71)
0.56 (0.9)	Camarillo Loam, Sandy Substratum (Ce)	IIw-2/2	Statewide Importance	5.09 (2.06)	5.43 (2.20)
0.75 (1.2)	Hueneme Sandy Loam (Hn)	Iiw-2/2	Prime	6.82 (2.76)	7.27 (2.94)
Used for staging					
	Camarillo Loam, Sandy Substratum (Ce)	IIw-2/2	Statewide Importance	4.8 (1.9)	
Disturbed during metering station construction					
	Camarillo Loam, Sandy Substratum (Ce)	IIw-2/2	Statewide Importance	3.7 (1.5)	
Permanent conversion					
	Camarillo Loam, Sandy Substratum (Ce)	IIw-2/2	Statewide Importance	0.9 (0.4)	

Source: USDA 1970a.

Notes:

[a] Soil Capability designations:
- II Soils with moderate limitations that reduce the choice of plants or that require moderate conservation practices.
- W Water in or on the soil interferes with plant growth or cultivation (corrected by artificial drainage).
- 2 Poor drainage or overflow hazard.

[b] Grades range from 1 to 6, with Grade 1 soils having few or no limitations that restrict use for crops and Grade 6 soils that are not suited for farming.

[c] California Department of Conservation 1998.

Impact AGR-9 Alt: Potential for Use of Agricultural Land for Staging Areas.

Under the Point Mugu Shore Crossing/Casper Road Pipeline Alternative, construction activities associated with staging areas could temporarily cause a loss of agricultural land, agricultural soils, crops, or crop production. Agricultural land that is preserved under the Williamson Act could be temporarily converted from agricultural land to non-agricultural land (CEQA Class II; NEPA minor adverse, short-term).

Construction of this alternative would require a 50-foot (15.2 m) by 4,200-foot (1,280 m) staging area and a 4.8–acre (1.9 ha) HDB termination staging area (Entrix 2005). The proposed location of the staging area is an agricultural field east of the south end of Casper Road. This area would be used to pre-fabricate two 4,200-foot 24-inch diameter pipeline segments. This activity would take place on agricultural fields but would not involve any digging. This would only involve the use of agricultural fields but not the conversion of any to non-agricultural use. A 3.7-acre (1.5 ha) area in the same location

would be needed for the construction footprint of the metering station (Entrix 2005). That the portion of this area would be permanently converted to non-agricultural purposes is discussed under Impact AGR-10 Alt.

Implementation of AM AGR-1b, AM AGR-1c, and MM AGR-1d would reduce the impact on farmers, if they choose to allow their land to be used as a staging area. Through these applicant measures and mitigation measures, the farmer would be compensated for the use of their land and their land would be subsequently restored after construction is completed. These mitigation measures would ensure that agricultural land used during staging is restored and construction impacts would be reduced to a level below significance criteria

Impact AGR-10 Alt: Permanent Conversion of Agricultural Land to Non-Agricultural Use.

Under the Point Mugu Shore Crossing/Casper Road Pipeline Alternative, construction of permanent facilities could cause a permanent loss of agricultural land, crops, or crop production. Agricultural land that is preserved under the Williamson Act could be permanently converted from agricultural land to non-agricultural land. Prime Farmland and Farmland of Statewide Importance soils could be converted to non-agricultural uses. (CEQA Class I; NEPA major adverse, short-term).

A 200-foot (61 m) by 200-foot (61 m) metering station would be constructed on 40,000 square feet (0.9 acre; 0.4 ha) of land at the south end of Casper Road for this alternative (Entrix 2005). The proposed location is on agricultural lands that have soils that are classified as Farmland of Statewide Importance, but they are not Williamson Act lands. Under the Ventura County guidance criteria, conversion of this amount of land from agricultural to non-agricultural use is not significant. However, if this alternative is implemented with any of the other Center Road Pipeline routes to the Center Road Valve Station, there would be a cumulative loss of 1 acre of Prime/Farmland of Statewide Importance soils, which is significant under Ventura County guidance criteria. Under CEQA guidelines, any conversions of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use also represents a significant impact. Therefore, this would represent an unmitigable impact and would be a Class I impact.

Impacts and mitigation measures associated with agriculture and soils for the proposed Project and for alternatives are summarized in Table 4.5-12.

Table 4.5-12 Summary of Agriculture and Soil Resources Impacts and Mitigation Measures

Impact	Mitigation Measure(s)
AGR-1: *Temporary Loss of Agricultural Land* Construction activities could temporarily cause a loss of agricultural land, crops, or crop production (CEQA Class II; NEPA minor adverse, short-term).	**AM AGR-1a. Compensation for Temporary and Permanent Loss of Agricultural Land, Crop Loss, Future Loss of Production, and Other Negative Impacts.** In compliance with California Government Code § 7267 et seq., the Applicant or its designated representative would make every

Table 4.5-12 Summary of Agriculture and Soil Resources Impacts and Mitigation Measures

Impact	Mitigation Measure(s)
	reasonable effort to acquire easements (temporary and permanent) expeditiously by negotiation. The easement rights would be appraised before the initiation of negotiations, and the property owner or the property owner's designated representative would be given an opportunity to accompany the appraiser during the inspection of the property. SoCalGas would establish an amount that it believes to be just compensation for the easement rights, based upon the appraisal. SoCalGas would provide the property owner with a written statement and summary of the basis for the amount it established as just compensation, which amount would not be less than the appraised value of the easement rights. The appraisal process would consider the value of the easement rights being acquired, and where applicable, crop loss, future loss of production, and any other negative impacts that SoCalGas' acquisition and use of the easement areas would have upon agricultural operations. **AM AGR-1b. Coordinate Pipeline Installation with Farmers**. The Applicant or its designated representative would schedule construction to begin immediately after harvest or before planting if the construction and planting/harvest schedules coincide closely enough to not compromise the overall pipeline construction completion schedule. The Applicant or its designated representative would let the farmer decide whether the farmer or the Applicant's contractor would remove seed/crops. **AM AGR-1c. Post-Construction Restoration Measures.** The Applicant or its designated representative would protect all substructures, such as drain tiles or other types of irrigations systems, during construction and replace any substructures if damaged. The Applicant or its designated representative would restore the grade of the TCE to match the surrounding field for drainage or compensate the farmer if the farmer chooses to have a contractor perform precision grading. **MM AGR-1d. Minimize Orchard Tree Removal.** Recognizing that no trees can grow within 15 feet (4.6 m) of the pipeline, the Applicant or its designated representative shall remove, box, maintain, and replant small orchard trees in the area between the TCE and the permanent ROW. The Applicant or its designated representative shall minimize the number of mature trees removed.

Table 4.5-12 Summary of Agriculture and Soil Resources Impacts and Mitigation Measures

Impact	Mitigation Measure(s)
AGR-2: *Permanent Conversion of Agricultural Land to Non-Agricultural Use* Operational activities could cause a loss of agricultural land, crops, or crop production. Construction of permanent facilities could cause a permanent loss of agricultural land, crops, or crop production. Agricultural land that is preserved under the Williamson Act could be permanently converted from agricultural land to non-agricultural land. Prime Farmland or Farmland of Statewide Importance could be converted to non-agricultural uses (CEQA Class I; NEPA major adverse, long-term).	None.
AGR-3: *Topsoil Loss, Mixing, and/or Compaction* Construction activities could result in topsoil and subsoil mixing, compaction, and/or introduction of weed/invasive species, thereby reducing agricultural productivity (CEQA Class II; NEPA minor adverse, short-term).	**AM TerrBio-4a. Weed Management Plan** (see Section 4.8, "Biological Resources – Terrestrial"). **MM AGR-3a. Topsoil Salvage and Replacement**. The Applicant or its designated representative shall ensure that the upper 12 inches (0.3 m) of topsoil (or less, depending on the existing depth of the topsoil) is salvaged, segregated from the rest of the soil, and replaced on top of the disturbed areas and replaced wherever the pipeline is trenched. **MM AGR-3b. Landowner Compensation for Soil Productivity Losses.** Prior to construction, the Applicant or its designated representative shall negotiate with landowners regarding measures to ensure that soil productivity is maintained and that the criteria for determining loss of soil productivity and the terms for compensation for such loss are determined.
AGR-4: *Dust Deposition* Dust generated during construction could be deposited on adjacent agricultural lands with planted crops, temporarily reducing productivity (CEQA Class II; NEPA minor adverse, short-term).	**MM AIR-2b. Construction Fugitive Dust Plan** (see Section 4.6, "Air Quality"). **MM AGR-4a. Dust Suppression Water Quality.** For dust suppression, the Applicant or its designated representative shall use potable water sources or water sources approved for discharge near agricultural uses.
AGR-5: *Loss of Tree Rows* Loss of tree rows could reduce agricultural productivity (CEQA Class II; NEPA minor adverse, short-term).	**MM TerrBio-2g. Tree Avoidance and Replacement** (see Section 4.8, "Biological Resources – Terrestrial").
AGR-6: *Impacts from a Leak or Fire Associated with the Natural Gas Transmission Line* If the natural gas transmission line leaked and/or was ignited, the resulting fire could cause the loss of crops or the contamination of the soil in the vicinity of the leak or fire (CEQA Class II; NEPA minor adverse, short-term).	**AM PS-3a. More Stringent Pipeline Design** (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **AM PS-4a. Class 3 Pipeline Design Criteria** (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **MM AGR-6a. Restoration After a Natural Gas Transmission Line Accident.** The Applicant or its

Table 4.5-12 Summary of Agriculture and Soil Resources Impacts and Mitigation Measures

Impact	Mitigation Measure(s)
	designated representative shall restore the area that was either contaminated or burned as a result of a breach in the natural gas transmission line. **MM PS-3c. Areas Subject to Accelerated Corrosion, Cathodic Protection System** (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **MM PS-4b. Pipeline Integrity Management Program** (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **MM PS-4c. Install Additional Mainline Valves Equipped with Either Remote Valve Controls or Automatic Line Break Controls (**see Section 4.2, "Public Safety: Hazards and Risk Analysis").
AGR-7 Alt: *Potential for Use of Agricultural Land for Staging Areas* Under the Arnold Road Shore Crossing/Arnold Road Pipeline Alternative, construction activities associated with staging areas could temporarily cause a loss of agricultural land, crops, or crop production. Agricultural land that is preserved under the Williamson Act could be temporarily converted from agricultural land to non-agricultural land. Prime Farmland or Farmland of Statewide Importance soils would temporarily be converted to non-agricultural uses (CEQA Class II; NEPA minor adverse, short-term).	**AM AGR-1a. Compensation for Temporary and Permanent Loss of Agricultural Land, Crop Loss, Future Loss of Production, and Other Negative Impacts.** **AM AGR-1b. Coordinate Pipeline Installation with Farmers**. **AM AGR-1c. Post-Construction Restoration Measures.** **MM AGR-1d. Minimize Orchard Tree Removal.**
AGR-8 Alt: *Permanent Conversion of Agricultural Land to Non-Agricultural Use* Under the Arnold Road Shore Crossing/Arnold Road Pipeline Alternative, construction of permanent facilities could cause a permanent loss of agricultural land, crops, or crop production. Agricultural land that is preserved under the Williamson Act could be permanently converted from agricultural land to non-agricultural land. The pipeline corridor could convert Prime Farmland and Farmland of Statewide Importance soils to non-agricultural uses (CEQA Class I; NEPA major adverse, long-term).	None.
AGR-9 Alt: *Potential for Use of Agricultural Land for Staging Areas* Under the Point Mugu Shore Crossing/Casper Road Pipeline Alternative, construction activities associated with staging areas could temporarily cause a loss of agricultural land, agricultural soils, crops, or crop production. Agricultural land that is preserved under the Williamson Act could be temporarily converted from agricultural land to non-agricultural land (CEQA Class II; NEPA minor adverse, short-term).	**AM AGR-1b. Coordinate Pipeline Installation with Farmers**. **AM AGR-1c. Post-Construction Restoration Measures.** **MM AGR-1d. Minimize Orchard Tree Removal.**

Table 4.5-12 Summary of Agriculture and Soil Resources Impacts and Mitigation Measures

Impact	Mitigation Measure(s)
AGR-10 Alt: *Permanent Conversion of Agricultural Land to Non-Agricultural Use* Under the Point Mugu Shore Crossing/Casper Road Pipeline Alternative, construction of permanent facilities could cause a permanent loss of agricultural lands, crops, or crop production. Agricultural land that is preserved under the Williamson Act could be permanently converted from agricultural land to non-agricultural land. Prime Farmland and Farmland of Statewide Importance soils could be converted to non-agricultural uses (CEQA Class I; NEPA major adverse, short-term).	None.

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